

THE LANCET

Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Beard DJ, Rees JL, Cook JA, et al. Arthroscopic subacromial decompression for subacromial shoulder pain (CSAW): a multicentre, pragmatic, parallel group, placebo-controlled, three-group, randomised surgical trial. *Lancet* 2017; published online Nov 20. [http://dx.doi.org/10.1016/S0140-6736\(17\)32457-1](http://dx.doi.org/10.1016/S0140-6736(17)32457-1).

CSAW – Supplementary appendix

Supplementary Table 1. Number randomised by site

Site	No randomised (%)
Barnet General Hospital	7 (2%)
Blackpool Victoria Hospital	2 (1%)
Buckinghamshire Healthcare NHS Trust (Wycombe)	8 (3%)
Darlington Memorial Hospital	6 (2%)
Derriford Hospital (Plymouth)	1 (<1%)
Dorset County Hospital	11 (4%)
Elective Orthopaedic Centre (Epsom)	4 (1%)
Frimley Park Hospital	2 (1%)
Hinchingbrooke Hospital	3 (1%)
Ipswich Hospital	17 (5%)
Medway Maritime Hospital	4 (1%)
Mid Yorkshire Hospitals NHS Trust	26 (8%)
NHS Lothian (Edinburgh)	21 (7%)
Norfolk and Norwich University Hospital	6 (2%)
North Devon District Hospital (Barnstaple)	8 (3%)
Nuffield Orthopaedic Centre (Oxford)	84 (27%)
Queen Elizabeth Hospital Birmingham	2 (1%)
Queen Elizabeth Hospital Kings Lynn	1 (<1%)
Robert Jones & Agnes Hunt Orthopaedic Hospital (Oswestry)	3 (1%)
Royal Berkshire Hospital (Reading)	4 (1%)
Royal Free Hospital (London)	12 (4%)
Russells Hall Hospital (Dudley)	17 (5%)
St Woolos Hospital (Gwent)	20 (6%)
Torbay Hospital	3 (1%)
University Hospital Coventry & Warwickshire	8 (3%)
University Hospital Llandough (Cardiff)	10 (3%)
University Hospital of South Manchester	8 (3%)
West Suffolk Hospital	10 (3%)
Worcestershire Royal Hospital	1 (<1%)
Yeovil District Hospital	4 (1%)
Total	313

Supplementary Table 2. Reasons for not treated per protocol and missing assessments

Factor	Level	decompression	arthroscopy only	no treatment
N		106	103	104
Reasons not Treated per Protocol - 6 months	no surgery	22 (21%)	32 (31%)	0 (0%)
	surgery - rotator cuff surgery	4 (4%)	4 (4%)	1 (1%)
	surgery - decompression	0 (0%)	3 (3%)	8 (8%)
	surgery - other	4 (4%)	4 (4%)	2 (2%)
	withdrawal	0 (0%)	0 (0%)	1 (1%)
	as randomized	76 (72%)	60 (58%)	92 (88%)
Reason OSS Missing - 6 months	staffing related reason	1 (1%)	1 (1%)	2 (2%)
	participant lost - likely due to unrelated health reasons	1 (1%)	0 (0%)	0 (0%)
	participant lost - moved and new address not known	1 (1%)	0 (0%)	0 (0%)
	participant non-responsive	7 (7%)	6 (6%)	5 (5%)
	participant withdrawal - no further reasons provided	0 (0%)	0 (0%)	3 (3%)
	participant withdrawal - no longer wants to be involved in research study	1 (1%)	0 (0%)	0 (0%)
	participant withdrawal - no time for study	2 (2%)	0 (0%)	2 (2%)
	participant withdrawal - surgery opt-out, no further reason given	1 (1%)	0 (0%)	0 (0%)
	participant withdrawal - symptoms resolved	1 (1%)	1 (1%)	0 (0%)
	participant withdrawal - unhappy with randomised intervention	0 (0%)	0 (0%)	2 (2%)
	participant withdrawal - unhappy with treatment received	1 (1%)	0 (0%)	0 (0%)
	participant withdrawal - unrelated health reasons	0 (0%)	1 (1%)	0 (0%)
	not lost	90 (85%)	94 (91%)	90 (87%)

Reasons not Treated per Protocol – 1 year	no surgery	17 (16%)	23 (22%)	0 (0%)
	surgery - rotator cuff surgery	5 (5%)	4 (4%)	1 (1%)
	surgery - decompression	0 (0%)	3 (3%)	18 (17%)
	surgery - other	4 (4%)	4 (4%)	6 (6%)
	unblinded and decompression	0 (0%)	1 (1%)	0 (0%)
	withdrawal	0 (0%)	0 (0%)	1 (1%)
	as randomized	80 (75%)	68 (66%)	78 (75%)
Reason OSS Missing - 1 year	staffing related reason	0 (0%)	1 (1%)	0 (0%)
	participant lost - likely due to unrelated health reasons	1 (1%)	0 (0%)	0 (0%)
	participant lost - moved and new address not known	1 (1%)	0 (0%)	1 (1%)
	participant non-responsive	10 (9%)	6 (6%)	12 (12%)
	participant withdrawal - no further reasons provided	0 (0%)	0 (0%)	3 (3%)
	participant withdrawal - no longer wants to be involved in research study	1 (1%)	1 (1%)	0 (0%)
	participant withdrawal - no time for study	2 (2%)	0 (0%)	2 (2%)
	participant withdrawal - surgery opt-out, no further reason given	1 (1%)	0 (0%)	0 (0%)
	participant withdrawal - symptoms resolved	1 (1%)	1 (1%)	0 (0%)
	participant withdrawal - unhappy with randomised intervention	0 (0%)	0 (0%)	2 (2%)
	participant withdrawal - unhappy with treatment received	1 (1%)	0 (0%)	0 (0%)
	participant withdrawal - unrelated health reasons	0 (0%)	1 (1%)	0 (0%)
	not lost	88 (83%)	93 (90%)	84 (81%)

Supplementary Table 3. Participants who had surgery and surgery involving decompression

	Decompression	Arthroscopy only	No treatment
N randomised	106	103	104
<i>At 6 months</i>			
Surgery of any kind	84 (79%)	71 (69%)	11 (11%)
Surgery inc. decompression	82 (77%)	9 (9%)	11 (11%)
<i>At 1 year</i>			
Surgery of any kind	89 (84%)	80 (78%)	25 (24%)
Surgery inc. decompression	87 (82%)	10 (10%)	25 (24%)

Supplementary Table 4. Other – Diagnosis as assessed during surgery

No. of participant receiving operation	Decompression (N=89)	Arthroscopy only (N=80)	No treatment (N=24)
Operative diagnosis – n (%)			
Impingement lesion	67 (75%)	46 (61%)	18 (75%)
Partial thickness tear			
bursal	13 (15%)	5 (7%)	0 (0%)
joint side	18 (21%)	17 (22%)	2 (8%)
Shape of Spur			
flat	18 (21%)	32 (44%)	4 (17%)
beaked	47 (53%)	33 (46%)	16 (70%)
hooked	23 (26%)	7 (10%)	3 (13%)

Supplementary Table 5. Non-surgical treatments during one year follow-up period

No. of participants receiving treatment – n (%)	Decompression	Arthroscopy only	No treatment
Corticosteroid injection	2 (2%)	1 (1%)	7 (8%)
Prescribed painkiller	0 (0%)	2 (2%)	0 (0%)
Over the counter medication (e.g. painkiller)	40 (48%)	30 (34%)	31 (38%)
Physiotherapy/chiropractic	8 (10%)	8 (10%)	11 (14%)
Hydrodilatation	0 (0%)	1 (1%)	1 (1%)

Supplementary Table 6. Sensitivity analyses of the Oxford Shoulder Score (OSS)

Analysis	Decompression	Arthroscopy only	No treatment	Decompression vs Arthroscopy only	Decompression vs No treatment	Arthroscopy only vs No treatment
	n, mean (SD)	n, mean (SD)	n, mean (SD)	Mean diff. (95% CI) [p-value]	Mean diff. (95% CI) [p-value]	Mean diff. (95% CI) [p-value]
OSS at 6 months (post-surgery follow-up)*	35.1 (10.8) n=90	35.6 (9.0); n=94		-0.3 (-2.9, 2.4) [0.8286]		
OSS at 6 months (excluding surgery within 2 months of time point)	33.8 (11.1); n=82	34.6 (9.1); n=85	29.7 (11.8); n=86	-0.6 (-3.4, 2.1) [0.6391]	3.4 (0.9, 5.8) [0.0088]	4.1 (1.5, 6.7) [0.0033]
OSS at 6 months (unadjusted analysis)				-1.6 (-4.6, 1.5) [0.3104]	3.3 (-0.2, 6.8) [0.0608]	4.9 (1.8, 8.0) [0.0021]
OSS at 6 months (bootstrapped CI)‡				-1.3 (-4.5, 1.6)	2.8 (-0.5, 5.9)	4.2 (1.2, 7.3)
OSS at 6 months (using response shift baseline)†	21.3 (8.4); n=85	24.6 (9.1); n=88	23.5 (8.9); n=81	-0.5 (-3.4, 2.5) [0.7612]	5.1 (1.8, 8.3) [0.0024]	4.9 (1.9, 7.9) [0.0013]
OSS at 1 year (Post-surgery follow-up)*	38.4 (10.6); n=73	38.0 (9.4); n=87		0.9 (-2.6, 4.4) [0.6015]		
OSS at 1 year (excluding surgery within 2 months of time point)	38.4 (10.2); n=87	38.4 (9.3); n=93	34.8 (11.6); n=81	0.5 (-2.5, 3.6) [0.7253]	3.7 (0.7, 6.6) [0.0186]	3.1 (0.2, 6.0) [0.0365]
OSS at 1 year (unadjusted analysis)				-0.2 (-3.0, 2.7) [0.9059]	3.9 (0.6, 7.3) [0.0204]	4.1 (1.0, 7.2) [0.0102]
OSS at 1 year (using response shift baseline)†	21.3 (8.4); n=85	24.6 (9.1); n=88	23.5 (8.9); n=81	1.1 (-1.7, 4.0) [0.4355]	5.0 (1.7, 8.3) [0.0029]	3.7 (0.6, 6.8) [0.0206]
OSS at 1 year (bootstrapped CI)‡				0.3 (-2.6, 3.3)	3.9 (1.3, 7.0)	3.6 (0.8, 6.9)
Mixed Model††						
OSS at 6 months	32.7 (11.6); n=90	34.2 (9.2); n=94	29.4 (11.9); n=90	-1.5 (-4.1, 1.2) [0.2848]	2.7 (-0.04, 5.5) [0.0531]	4.2 (1.6, 6.9) [0.0017]
OSS at 1 year	38.2 (10.3); n=88	38.4 (9.3); n=93	34.3 (11.8); n=84	0.4 (-2.3, 3.1) [0.7684]	3.7 (0.9, 6.5) [0.0103]	3.3 (0.6, 6.0) [0.0160]

Notes:

* Substituting post-surgery follow-up score for post-randomisation where surgery delayed by 4 months or more.

† OSS asked 1 year with heading “In the weeks leading up to your treatment, can you recall how your shoulder was before you entered the study (1 year ago)?

†† Mixed model including treatment, time, and time/treatment interaction. N analysed across two groups per comparison as ordered above (n=189, 184 & 187 respectively)

‡ Bootstrapping carried out with 1000 replications, clustered sampling by site; bias corrected and accelerated method.

Supplementary Table 7. Other secondary outcomes (PainDETECT)

Secondary Outcome	Decompression	Arthroscopy only	No treatment	Decompression vs Arthroscopy only	Decompression vs No treatment	Arthroscopy only vs No treatment
	mean (SD)	mean (SD)	mean (SD)	Mean diff. (95% CI) [p-value]	Mean diff. (95% CI) [p-value]	Mean diff. (95% CI) [p-value]
<i>At 6 months</i>						
PainDETECT Current						
Pain	3.2 (2.7); n=88	3.2 (2.4); n=92	4 (2.8); n=89	-0.1 (-0.7 , 0.4) [0.6148]	-0.7 (-1.2 , -0.3) [0.0044]	-0.5 (-0.9 , -0.2) [0.0033]
PainDETECT Strongest						
Pain	5.9 (3.0); n=88	5.7 (2.7); n=91	6.7 (3.0); n=89	0.0 (-0.7 , 0.7) [0.9963]	-0.8 (-1.8 , 0.3) [0.1437]	-0.7 (-1.6 , 0.3) [0.1681]
PainDETECT Average						
Pain	4.2 (2.8); n=88	4.1 (2.4); n=91	5.0 (2.6); n=89	-0.1 (-0.7 , 0.6) [0.8724]	-0.6 (-1.3 , 0.2) [0.1349]	-0.5 (-1.2 , 0.2) [0.1453]
<i>At 1 year</i>						
PainDETECT Current						
Pain	2.0 (2.3); n=85	2.4 (2.4); n=90	3.4 (2.9); n=81	-0.4 (-1.2 , 0.3) [0.2449]	-1.4 (-2.0 , -0.7) [0.0002]	-0.9 (-1.6 , -0.2) [0.0125]
PainDETECT Strongest						
Pain	4.3 (3.4); n=85	4.5 (3.3); n=90	5.6 (3.2); n=81	-0.5 (-1.6 , 0.7) [0.4339]	-1.3 (-2.1 , -0.4) [0.0043]	-0.8 (-1.9 , 0.3) [0.1518]
PainDETECT Average						
Pain	2.9 (2.5); n=85	3.0 (2.6); n=88	4.1 (3); n=81	-0.3 (-1.1 , 0.5) [0.4390]	-1.3 (-1.9 , -0.6) [0.0008]	-1.0 (-1.8 , -0.1) [0.0355]

Supplementary Table 8. Patient Perceptions/Satisfaction

Factor	Level	Decompression	Arthroscopy only	No treatment	P values
Patient Perception/Satisfaction at 6 Months – n (%)					
How are the problems relating to your shoulder NOW, compared to 6 months ago (before your randomised treatment)?	no problems at all now	5 (6%)	4 (4%)	4 (4%)	Decompression vs arthroscopy only P=0.5710 Decompression vs no treatment P=0.0165 Arthroscopy only vs no treatment P=0.0075
	much better	44 (51%)	35 (38%)	23 (26%)	
	slightly better	10 (11%)	29 (31%)	16 (18%)	
	no change	7 (8%)	13 (14%)	25 (28%)	
	slightly worse	11 (13%)	8 (9%)	12 (13%)	
	much worse	10 (11%)	4 (4%)	9 (10%)	
	not indicated / missing	19	10	15	
Overall, how pleased have you been with the results of your randomised shoulder treatment?	very pleased	42 (49%)	36 (43%)	30 (34%)	Decompression vs arthroscopy only P=0.6400 Decompression vs no treatment P=0.0050 Arthroscopy only vs no treatment P=0.0086
	fairly pleased	28 (33%)	35 (42%)	23 (26%)	
	not very pleased	9 (11%)	10 (12%)	23 (26%)	
	very disappointed	6 (7%)	3 (4%)	12 (14%)	
	not indicated / missing	21	19	16	
If you could go back in time, would you choose the treatment you were allocated to?	no	7 (8%)	8 (9%)	29 (33%)	Decompression vs arthroscopy only P=0.9638 Decompression vs no treatment P=0.0074 Arthroscopy only vs no treatment P=0.0082
	yes	60 (70%)	57 (67%)	41 (47%)	
	not sure	19 (22%)	20 (24%)	18 (20%)	
	not indicated / missing	20	18	16	
Patient Perception/Satisfaction at 1 year – n (%)					
How are the problems relating to your shoulder NOW,	no problems at all now	18 (21%)	17 (18%)	10 (13%)	Decompression vs arthroscopy only P=0.3609
	much better	44 (51%)	41 (45%)	33 (41%)	

compared to 1 year ago (before your randomised treatment)?	slightly better	10 (11%)	18 (20%)	12 (15%)	Decompression vs no treatment P=0.0119 Arthroscopy only vs no treatment P=0.0903
	no change	12 (14%)	9 (10%)	18 (23%)	
	slightly worse	2 (2%)	5 (5%)	2 (3%)	
	much worse	1 (1%)	2 (2%)	5 (6%)	
	not indicated / missing	19	11	24	
Overall, how pleased have you been with the results of your randomised shoulder treatment?	very pleased	53 (62%)	44 (48%)	34 (43%)	Decompression vs arthroscopy only P=0.0804 Decompression vs no treatment P=0.0057 Arthroscopy only vs no treatment P=0.1917
	fairly pleased	18 (21%)	29 (32%)	18 (23%)	
	not very pleased	9 (11%)	12 (13%)	17 (22%)	
	very disappointed	5 (6%)	7 (8%)	10 (13%)	
	missing	21	11	25	
If you could go back in time, would you choose the treatment you were allocated to?	no	8 (9%)	10 (11%)	20 (25%)	Decompression vs arthroscopy only P=0.4237 Decompression vs no treatment P=0.1218 Arthroscopy only vs no treatment P=0.3263
	yes	63 (73%)	70 (76%)	44 (56%)	
	not sure	15 (17%)	12 (13%)	15 (19%)	
	missing	20	18	16	

Supplementary Table 9. Other secondary outcomes (Patient reported outcomes)

Factor	Level	Decompression	Arthroscopy only	No treatment	Total	P values
Any problems at 6 Months – n (%)						
Do you have any problem (movement or pain) with the other shoulder?	no	52 (60%)	65 (71%)	60 (68%)	177 (67%)	Decompression vs Arthroscopy only P=0.1215
	yes - a new problem since randomisation	7 (8%)	8 (9%)	14 (16%)	29 (11%)	
	yes - a long standing problem	27 (31%)	19 (21%)	14 (16%)	60 (23%)	Decompression vs no treatment P=0.1250
	missing	20	11	16	47	Arthroscopy only vs no treatment P=0.9353
Any problems at 1 year – n (%)						
Do you have any problem (movement or pain) with the other shoulder?	no	56 (65%)	60 (65%)	55 (67%)	171 (66%)	Decompression vs Arthroscopy only P=0.9423
	yes - a new problem since randomisation	13 (15%)	15 (16%)	16 (20%)	44 (17%)	
	yes - a long standing problem	17 (20%)	17 (18%)	11 (13%)	45 (17%)	Decompression vs no treatment P=0.6131
	missing	20	11	22	53	Arthroscopy only vs no treatment P=0.6566
Treatment Expectation – Are the results of your treatment what you expected? Asked at 1 year – n (%)						
Relief from symptoms	definitely yes	36 (44%)	29 (34%)	18 (23%)	83 (34%)	Decompression vs Arthroscopy only P=0.0639
	probably yes	28 (34%)	25 (29%)	27 (35%)	80 (33%)	
	not sure	6 (7%)	12 (14%)	12 (16%)	30 (12%)	Decompression vs no treatment

	probably not		8 (10%)	10 (12%)	10 (13%)	28 (11%)	P=0.0019
	definitely not		4 (5%)	9 (11%)	10 (13%)	23 (9%)	Arthroscopy only vs no treatment P=0.2330
	missing		24	18	27	69	
To do more everyday activities	definitely yes		44 (54%)	37 (44%)	22 (29%)	103 (42%)	Decompression vs Arthroscopy only P=0.0899
	probably yes		24 (29%)	25 (30%)	25 (32%)	74 (30%)	
	not sure		5 (6%)	2 (2%)	14 (18%)	21 (9%)	Decompression vs no treatment P=0.0004
	probably not		7 (9%)	10 (12%)	10 (13%)	27 (11%)	
	definitely not		2 (2%)	10 (12%)	6 (8%)	18 (7%)	Arthroscopy only vs no treatment P=0.1067
	not indicated		24	19	27	70	
To sleep more comfortably	definitely yes		44 (54%)	35 (41%)	24 (31%)	103 (42%)	Decompression vs Arthroscopy only P=0.0568
	probably yes		20 (25%)	23 (27%)	27 (35%)	70 (29%)	
	not sure		6 (7%)	11 (13%)	6 (8%)	23 (9%)	Decompression vs no treatment P=0.0034
	probably not		6 (7%)	8 (9%)	8 (10%)	22 (9%)	
	definitely not		5 (6%)	9 (10%)	12 (16%)	26 (11%)	Arthroscopy only vs no treatment P=0.2864
	missing		25	17	27	69	
To get back to my usual job	definitely yes		36 (59%)	38 (57%)	16 (30%)	90 (50%)	Decompression vs Arthroscopy only P=0.5868
	probably yes		15 (25%)	14 (21%)	19 (36%)	48 (27%)	
	not sure		2 (3%)	3 (4%)	7 (13%)	12 (7%)	Decompression vs no treatment

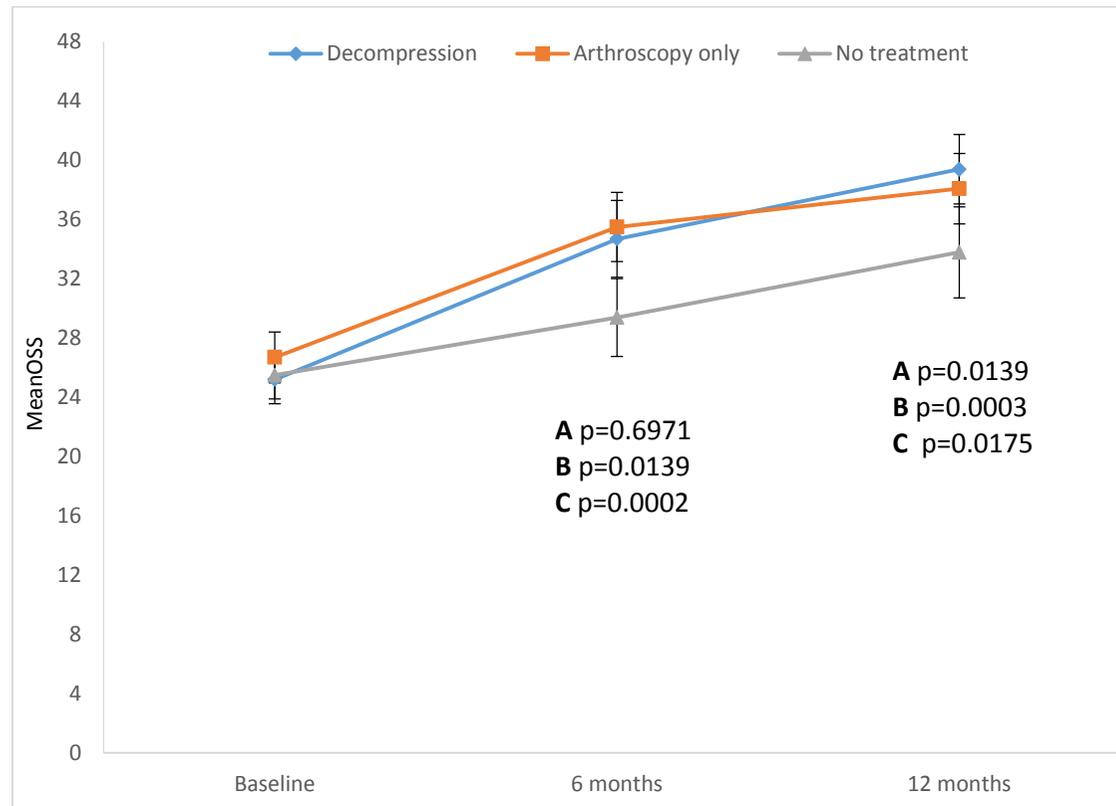
	probably not		4 (7%)	3 (4%)	7 (13%)	14 (8%)	P=0.0034
	definitely not		4 (7%)	9 (13%)	4 (8%)	17 (9%)	Arthroscopy only vs no treatment P=0.0235
	missing		45	36	51	132	
To exercise and to recreational activities	not at all likely		6 (8%)	10 (12%)	10 (13%)	26 (11%)	Decompression vs Arthroscopy only P=0.0524
	slightly likely		14 (18%)	18 (22%)	15 (19%)	47 (20%)	
	somewhat likely		12 (16%)	20 (24%)	20 (26%)	52 (22%)	Decompression vs no treatment P=0.0265
	very likely		19 (25%)	17 (20%)	19 (25%)	55 (23%)	
	extremely likely		26 (34%)	18 (22%)	13 (17%)	57 (24%)	Arthroscopy only vs no treatment P=0.8203
	missing		29	20	27	76	
To prevent future disability	not at all likely		6 (8%)	10 (13%)	15 (22%)	31 (14%)	Decompression vs Arthroscopy only P=0.0984
	slightly likely		14 (20%)	12 (15%)	15 (22%)	41 (19%)	
	somewhat likely		9 (13%)	22 (28%)	14 (20%)	45 (21%)	Decompression vs no treatment P=0.0067
	very likely		22 (31%)	23 (29%)	14 (20%)	59 (27%)	
	extremely likely		20 (28%)	12 (15%)	11 (16%)	43 (20%)	Arthroscopy only vs no treatment P=0.1473
	missing		35	24	35	94	

Supplementary Table 10. Reasons for study participants not undergoing surgery (12 months).

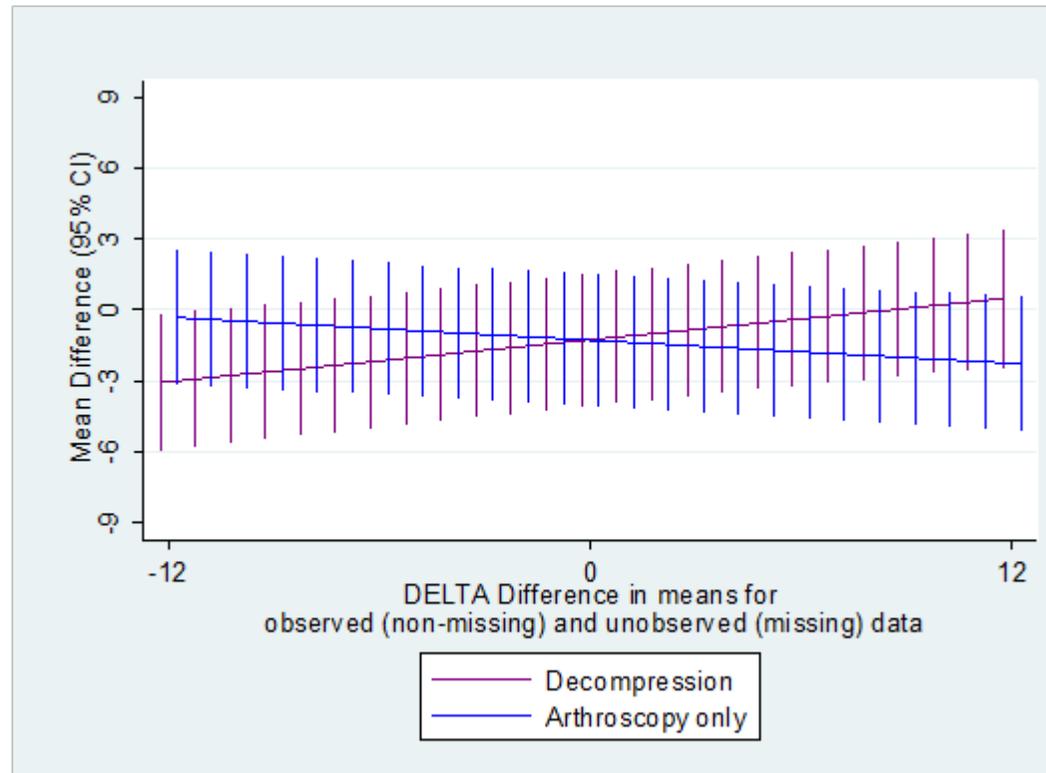
	Randomised to	Surgery not performed due to	Note
	Arthroscopy only	Participant choice	Phobia of anaesthetic
	Arthroscopy only	Participant choice	Study withdrawal prior to surgery
	Arthroscopy only	Participant choice	Study withdrawal prior to surgery
	Arthroscopy only	Participant choice	Study withdrawal prior to surgery
	Arthroscopy only	Clinically indicated	No reason given
	Arthroscopy only	Participant choice	Surgery opt-out
	Arthroscopy only	Participant choice	Participant removed themselves from surgical waiting list – no reason given
	Arthroscopy only	Clinically indicated	Unrelated medical condition – medically unfit for surgery
	Arthroscopy only	Participant choice	Surgery opt-out
	Arthroscopy only	Participant choice	Surgery opt-out
	Arthroscopy only	Participant choice	Surgery opt-out
	Arthroscopy only	Waiting list/Unclear	Participant’s surgery was delayed due to waiting list. The local research officer noted that the pt had been removed from surgical waiting list - reason given was 'pain resolved'.
	Arthroscopy only	Participant choice	Surgery opt-out
	Arthroscopy only	Clinically indicated	No reason given
	Arthroscopy only	Clinically indicated	Participant surgery was delayed due to hip surgery taking priority. Dr advised that clinically shoulder surgery is no longer required. Removed from waiting list, discharged and referred back to general practitioner.
	Arthroscopy only	Participant choice	Surgery opt-out
	Arthroscopy only	Participant choice	Surgery opt-out due to symptoms resolved
	Arthroscopy only	Participant choice	Surgery opt-out
	Arthroscopy only	Clinically indicated	Unrelated medical condition – participant was not considered to be fit for surgery within CSAW study follow-up period.
	Arthroscopy only	Participant choice	Surgery opt-out – no further routine hospital appointments have been scheduled
	Arthroscopy only	Participant choice	Surgery opt-out – surgery delayed due to waiting list delays
	Arthroscopy only	Participant choice	Surgery opt-out
	Arthroscopy only	Waiting list	Surgery delayed
	Decompression	Participant choice	Study withdrawal prior to surgery

	Decompression	Participant choice	Participant no longer wants surgery as symptoms have resolved – removed from waiting list
	Decompression	Waiting list/unclear	Surgery not performed - did not have surgery during study period due to waiting list. Converted to 'normal clinical pathway'
	Decompression	Participant choice	Participant requested surgery opt-out and then study withdrawal.
	Decompression	Participant choice	Participant delayed surgery as symptoms resolving, then requested study withdrawal when RN made contact to arrange 12 month follow-up.
	Decompression	Participant choice	Study withdrawal prior to surgery
	Decompression	Clinically indicated/unclear	Treatment for unrelated medical condition took precedence – reported as lost to follow-up at 6 & 12 months.
	Decompression	Participant choice	Participant deferred surgery, no response to contact from local CSAW team. No surgery performed within the local trust and no further visits to hospital.
	Decompression	Participant choice	Participant did not attend a number of routine hospital appointments including pre-op assessment, they were removed from the surgical waiting list.
	Decompression	Participant choice	Surgery opt-out
	Decompression	Clinically indicated	Unrelated medical condition – participant was no longer fit for surgery
	Decompression	Participant choice	Surgery opt-out
	Decompression	Clinically indicated	Unrelated medical condition – participant was no longer fit for surgery
	Decompression	Participant choice	Surgery opt-out
	Decompression	Participant choice	Surgery opt-out
	Decompression	Waiting list	Surgery delayed
	Decompression	Waiting list	Surgery delayed

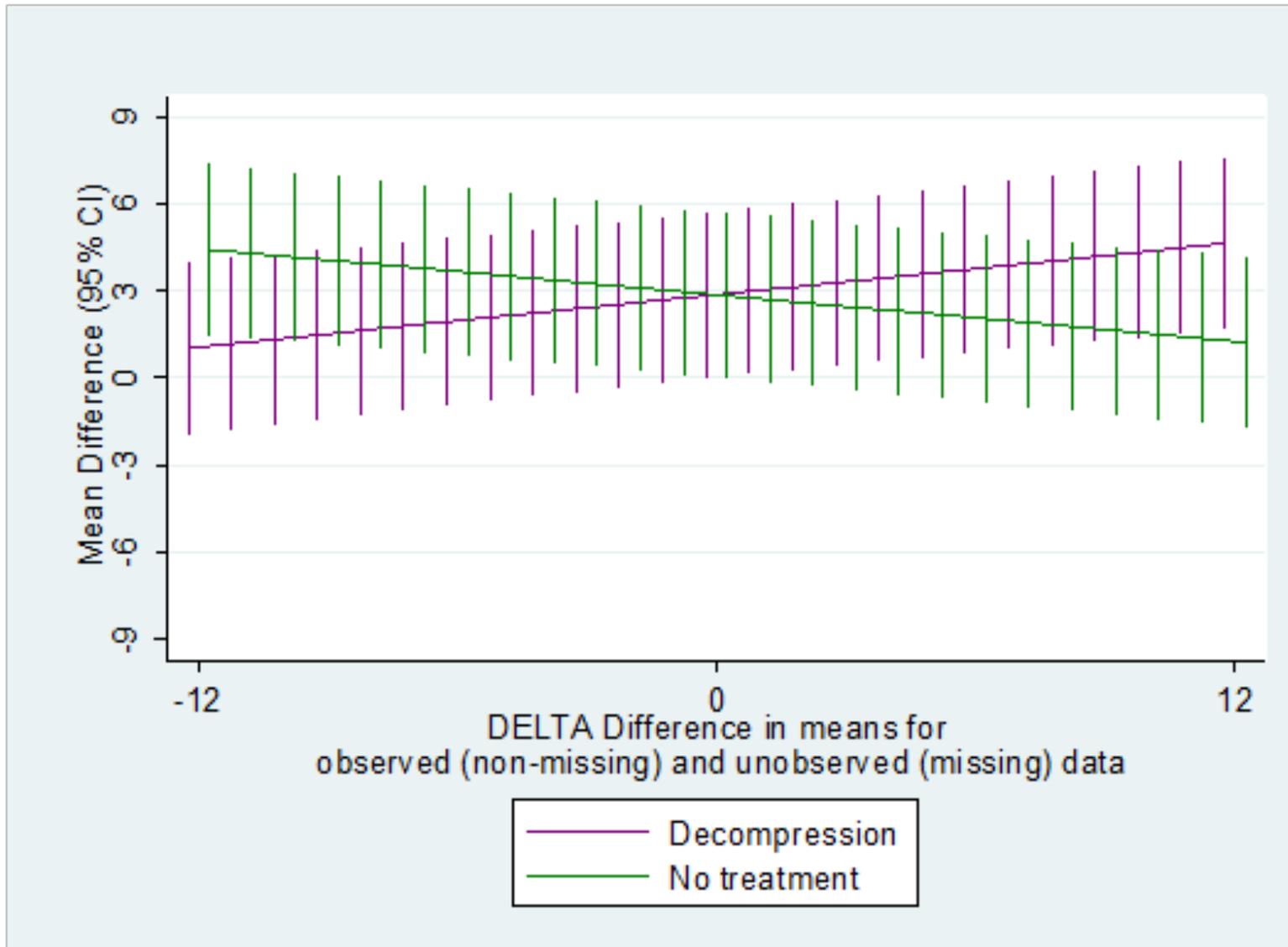
Supplementary Figure 1. Oxford Shoulder Score from 'Per protocol' analyses by follow-up time point (mean with 95% confidence interval). Statistical comparisons denoted by letter. A = decompression v arthroscopy only, B= decompression v no treatment, C=arthroscopy only v no treatment.



Supplementary Figure 2. Sensitivity of Decompression versus Arthroscopy only comparison of OSS to missing data not at random using a PMM (pattern mixture model) approach



Supplementary Figure 3. Sensitivity of Decompression vs no treatment comparison of OSS to missing data not at random using a PMM (pattern mixture model) approach



Supplementary Figure 4. Sensitivity of Arthroscopy only vs no treatment comparison of OSS to missing data not at random using a PMM (pattern mixture model) approach

